REMARKS

Claims 1-32 are pending in this case. In the Office Action mailed June 14, 2005 the Examiner took the following action: (1) rejected claims 3-4 and 32 under 35 USC §112 ¶2 as being indefinite; (2) rejected claims 1-13 and 16-19 under 35 USC § 102 as being anticipated by Anthony (U.S. Patent No. 3,633,043); (3) rejected claims 14-15 under 35 USC §103(a) as being unpatentable over Anthony in view of Chung (U.S. Patent No. 6,825,735); (4) rejected claims 20-25, 27, and 29-32 under 35 U.S.C. §103(a) as being unpatentable over Anthony in view of Chung; (5) rejected claims 26 and 28 as being unpatentable over Anthony in view of Chung and Ting (U.S. Patent No. 4,390,844).

Applicant respectfully requests reconsideration of the rejections of claims 1-32 in view of the foregoing amendments and the following remarks.

In one embodiment, Applicant teaches an apparatus for creating a sinusoidal signal for testing total harmonic distortion of a system. The apparatus includes a square wave generator, such as a Schmidt trigger; an integrator that converts the square wave to a triangular wave; and a filter, such as a generalized impedence converter configured as an active band-pass filter, which is passes the fundamental frequency of the triangle wave while attenuating other harmonic frequencies. During use, the Schmidt trigger is tuned to generate a frequency and the filter is tuned to pass through the same frequency. The generalized impedence converter may be tunable to filter different frequencies.

The sine wave produced may be used as an input or reference signal for testing total harmonic distortion in electronic device. A total harmonic distortion sensor operates by inputting a fundamental sinusoidal wave into a device and then measuring the amplitude of harmonics of the fundamental sinusoidal wave in the output signal by comparing it to a reference signal identical to the input signal. It is therefore important to control the amplitude of harmonics of the input signal.

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1. *Rejections of claims 3-4 and 32 under 35 U.S.C. §112 ¶2 as being indefinite*

Claims 3-4 and 32 stand rejected under 35 U.S.C. §112 ¶2 as being indefinite for failing to clearly indicate which element is "a solid state switching device" or a "solid state switching device" that includes a transistor. By this amendment, Applicant has amended the specification to point out that the Schmidt trigger serves as the solid state switching device in one embodiment of the invention.

2. *Rejection of claims 1-13 and 16-19 under 35 USC § 102 as being anticipated by Anthony*

Claims 1-13 and 16-19 stand rejected under 35 USC § 102 as being anticipated by Anthony. Applicant respectfully submits that anticipation has not been established. In order to establish anticipation, each and every element of the claimed device must be found in a single prior art reference.

With respect to claims 1 and 8, Applicant asserts that none of the cited references disclose generating a triangle wave of a predetermined frequency, then filtering the triangle wave in a band-pass filter to produce a sine wave at the same predetermined frequency.

Anthony teaches a constant slew rate (CSR) circuit that produces an output signal having a slope equal to the value of the input. Anthony teaches that CSR circuits may be combined to form a double integrator that converts square waves into an allegedly sinusoidal wave.

However, Applicant asserts that the CSR circuits of Anthony do not produce sine waves as recited in claim 1 or sine waves along with selected harmonics of predetermined amplitudes as recited in claim 8. The CSR circuits produce an output having a rate of increase equal to an input. Col. 3, lines 68-72. Anthony asserts that a triangle wave input into such a circuit will be converted into a sinusoidal wave. However, an output having a slope equal to the value of an input, where the input is a triangular wave, is in fact a series of parabolic shapes, which may appear sinusoidal but contains other frequencies. The integral of a line b*x of constant slope b is ½ $b*x^2$, i.e. a parabola.

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Anthony agrees with this conclusion, stating that the output of the device of Figure 10 is not suitable where a true sinusoidal waveform is needed. Col. 7, lines 5-15. Anthony claims that the embodiments of the CSR circuits of Figures 13 and 16 remedy this problem. However, the embodiment of Figure 13, which he claims will reduce harmonic distortion, comprises nothing more than a rate limiter, which imposes a maximum slew rate limitation on the output signal. Col. 7, lines 51-60. In a like manner, the embodiment of Figure 16, teaches a circuit compensating for a voltage drop across diodes making up the CSR circuit. These circuits clearly do not output a sinusoidal wave consisting of the output of a sine function.

The CSR circuits of Anthony are also not configured to generate a predetermined frequency or to filter a predetermined frequency as recited in claim 1. The Circuits of Anthony produce an output having a rate of change equal to an input. Col. 3, lines 68-72. These circuits are then coupled to produce the dual integrator system of Figure 10. Col. 10, lines 47-63. They are not in any way tuned to produce or filter a specific frequency.

Anthony also does not teach coupling a filter with a triangle generator as claimed by Applicant. The only combination disclosed by Anthony involving an integrator is the dual integrator of Figure 10, which does not include a filter or suggest combination of a filter with an integrator. Anthony does suggest that the CSR circuits may be used to produce low-pass, band-pass, and high-pass filters, integrators, and differentiators. Col. 15, lines 1-16. However, Anthony does not teach or in any way suggest combination a CSR configured as a filter with an integrator to produce a sine wave. The device of Figure 10 contains CSR circuits configured as integrators, not as filters, such as a band-pass filter. Col. 10, lines. 47-63.

With respect to claim 2, Anthony does not teach or suggest generating a square wave at a predetermined frequency; integrating the square wave into the triangle wave; and then filtering the triangle wave in a filter configured to pass the same predetermined frequency. As discussed above, none of the cited references disclose coupling an integrator with a filter. The circuits of

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Anthony are frequency independent and are therefore not configured to filter a predetermined frequency.

Claims 3-7 are dependent on allowable claim 1 and are therefore allowable for at least the reasons discussed hereinabove.

Claims 9-13 and 16-19 are dependent on allowable claim 8 and are therefore allowable for at least the reasons discussed hereinabove.

3. Rejection of claims 14 and 15 under 35 USC §103(a) as being unpatentable over Anthony in view of Chung

Claims 14 and 15 stand rejected under 35 U.S.C. §103(a) as being obvious over Anthony in view of Chung. Applicant asserts that claims 14 and 15 are dependent on allowable claim 8 and are therefore allowable, for at least the reasons discussed hereinabove.

4. Rejection of claims 20-25, 27, and 29-32 under 35 U.S.C. §103(a) as being unpatentable over Anthony in view of Chung

Claims 20-25, 27, and 29-32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Anthony in view of Chung. Applicant respectfully submits that none of the cited references disclose a Schmidt trigger providing an input to an integrator and having the output of the integrator filtered by a generalized impedence converter.

As discussed above, none of the cited references disclose coupling an integrator with a filter to produce a sine wave as claimed by Applicant. Furthermore, none of the cited references disclose the use of a generalized impedence converter to accomplish the filtering step. The CSR circuits of Anthony are neither filters nor are they configured as generalized impedence converters. The CSR circuits of Anthony are simply configured to produce an output having a slope equal to an input. Col. 3, lines 68-72. Anthony does suggest that the CSR circuits may be used to produce low-pass, band-pass, and high-pass filters, integrators, and differentiators. Col. 15, lines 1-16. However, Anthony does not teach or in any way suggest combination a CSR configured as a filter with an integrator to produce a sine wave. The device of Figure 10

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contains CSR circuits configured as integrators, not as filters, such as a band-pass filter. Col. 10, lines 47-63.

Claims 21-25, 27, and 29-32 are dependent on claim 20 and are therefore allowable for at least the reasons discussed hereinabove.

5. Rejection of claims 26 and 28 as being unpatentable over Anthony in view of Chung and Ting

Claims 26 and 28 are dependent on allowable claim 20 and are therefore allowable for at least the reasons discussed hereinabove.

CONCLUSION

Applicants respectfully request entry of the Amendment and reconsideration of allowance of all claims in this patent application. If there are any remaining matters that can be handled by telephone conference, the Examiner is kindly invited to contact the undersigned.

Respectfully submitted,

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MAIL CERTIFICATE

I hereby certify that this communication is being deposited with the United States Postal Service via first class mail under 37 C.F.R. § 1.08 on the date indicated below addressed to: MAIL STOP AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

October 12, 2005
Date of Deposit

Wendy Saxby
Wendy Saxby